

Effective Date Summer 2005-2006

Course Description

Prerequisite: A grade of "C" or better in CHEM 1001. Credit will not be given for both this course and CHEM 1202 or CHEM 2261. A continuation of CHEM 1001 covering the basic topics of organic chemistry and biochemistry.

Course Objectives

Students will:

1. Understand the fundamentals of chemistry as presented in the topical outline.
2. Develop critical thinking and problem solving skills.

Procedures to Evaluate these Objectives

1. In-class problems after concept presentation
2. In-class exams
3. Cumulative final exam

Use of Results of Evaluation to Improve the Course

1. Student responses to in-class problems will be used to immediately help clarify any misunderstandings and to later adjust the appropriate course material.
2. All exams will be graded and examined to determine areas of teaching which could use improvement.
3. All evaluation methods will be used to determine the efficacy of the material presentation.

Detailed Topical Outline

1. An introduction to organic chemistry
 - a. Carbon chains, bonding, and model building
 - b. Functional groups: nomenclature, physical and chemical properties, reactions.
 - i. Saturated, unsaturated hydrocarbons and aromatics
 - ii. Alcohols, phenols, thiols and ethers
 - iii. Aldehydes and ketones
 - iv. Carboxylic acids and derivatives
 - v. Amines and amides
2. An introduction to biochemistry.
 - a. Biomolecules: Structure and Function
 - i. Carbohydrates
 - ii. Lipids
 - iii. Amino acids and proteins

- iv. Enzymes
- v. Bases, nucleotides, RNA and DNA

- b. Metabolism
 - i. Carbohydrates
 - ii. Aerobic respiration and energy
 - iii. Lipid catabolism